

What is claimed is:

1. A process for forming granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester comprising the steps of:

(a) compacting N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder to form compacts; and

(b) breaking up said compacts to form said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester.

2. The process according to claim 1, further comprising the step of screening said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester to obtain a desired particle size.

3. The process according to claim 1, wherein a dry binder is mixed with the N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester before the compacting step.

4. The process according to claim 3, wherein said dry binder is selected from the group consisting of pregelatinized corn starch, microcrystalline cellulose, hydrophilic polymers and mixtures thereof.

5. The process according to claim 4, wherein said hydrophilic polymer is selected from the group consisting of methyl cellulose, hydroxypropylmethyl cellulose, hydroxypropyl cellulose,

polyvinylpyrrolidone, alginates, xanthan gum, gellan gum, gum arabic and mixtures thereof.

6. The process according to claim 3, wherein said dry binder is used in an amount from about 0.1% to about 40% by weight of the neotame powder.

7. The process according to claim 6, wherein said dry binder is used in an amount from about 1% to about 20% by weight of the neotame powder.

8. The process according to claim 1, wherein a known natural sweetener or other high intensity sweetener is mixed with the N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester before the compacting step.

9. The process according to claim 8, wherein said known natural sweetener or other high intensity sweetener is selected from the group consisting of aspartame, acesulfame salts, sucralose, saccharin, alitame, cyclamates, stevia derivatives, thaumatin, sucrose, high fructose corn syrup, high conversion corn syrup, crystalline fructose, glucose, dextrose, polyol sugar alcohols, invert sugar and mixtures thereof.

10. The process according to claim 8, wherein said known natural sweetener or other high intensity sweetener is used in an amount from about 0.01% to about 99.99% by weight of the neotame powder.

11. The process according to claim 10, wherein said known natural sweetener or other high intensity sweetener is used in an amount from about 1% to about 99% by weight of the neotame powder.

12. The process according to claim 1, wherein a bulking agent is mixed with the N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester before the compacting step.

13. The process according to claim 12, wherein said bulking agent is selected from the group consisting of dextrose, maltodextrin, lactose, inulin, polyols, polydextrose, cellulose, cellulose derivatives, organic acids and mixtures thereof.

14. The process according to claim 12, wherein said bulking agent is used in an amount from about 25% to about 99.99% by weight of the neotame powder.

15. The process according to claim 14, wherein said bulking agent is used in an amount from about 50% to about 99.99% by weight of the neotame powder.

16. The process according to claim 1, wherein said compacting step is accomplished using a method selected from the group consisting of roller compaction, tableting, slugging, ram extrusion, plunger pressing, roller briquetting, reciprocating piston processing, die pressing and pelleting.

17. The process according to claim 16, wherein said

method is roller compaction using a roller compactor and wherein said compacts take the form of flakes or chips.

18. The process according to claim 1, wherein said breaking up step is accomplished using a mill.

19. A N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition made according to the process comprising the steps of:

(a) compacting N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder to form compacts; and

(b) breaking up said compacts to form granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester.

20. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19, wherein said compacting is accomplished using roller compaction and wherein said compacts take the form of flakes or chips.

21. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19, wherein said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester have a particle size from about 20 mesh to about 200 mesh.

22. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to

claim 21, wherein said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester have a particle size from about 20 mesh to about 60 mesh.

23. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 21, wherein said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester have a particle size from about 60 mesh to about 100 mesh.

24. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 21, wherein said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester have a particle size from about 100 mesh to about 200 mesh.

25. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 21, wherein said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester have a particle size greater than about 200 mesh.

26. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19, wherein a dry binder is mixed with the N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester before the compacting step.

27. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 26, wherein said dry binder is selected from the group consisting of pregelatinized corn starch, microcrystalline cellulose, hydrophilic polymers and mixtures thereof.

28. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 27, wherein said hydrophilic polymer is selected from the group consisting of methyl cellulose, hydroxypropylmethyl cellulose, hydroxypropyl cellulose, polyvinylpyrrolidone, alginates, xanthan gum, gellan gum, gum arabic and mixtures thereof.

29. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 26, wherein said dry binder is used in an amount from about 0.1% to about 40% by weight of the neotame powder.

30. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 29, wherein said dry binder is used in an amount from about 1% to about 20% by weight of the neotame powder.

31. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19, wherein a known natural sweetener or other high intensity sweetener is mixed with the N-[N-(3,3-

dimethylbutyl)-L-(-aspartyl]-L-phenylalanine 1-methyl ester before the compacting step.

32. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 31, wherein said known natural sweetener or other high intensity sweetener is selected from the group consisting of aspartame, acesulfame salts, sucralose, saccharin, alitame, cyclamates, stevia derivatives, thaumatin, sucrose, high fructose corn syrup, high conversion corn syrup, crystalline fructose, glucose, dextrose, polyol sugar alcohols, invert sugar and mixtures thereof.

33. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 31, wherein said known natural sweetener or other high intensity sweetener is used in an amount from about 0.01% to about 99.99% by weight of the neotame powder.

34. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 33, wherein said known natural sweetener or other high intensity sweetener is used in an amount from about 1% to about 99% by weight of the neotame powder.

35. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19, wherein a bulking agent is mixed with the N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester before the compacting step.

36. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 35, wherein said bulking agent is selected from the group consisting of dextrose, maltodextrin, lactose, inulin, polyols, polydextrose, cellulose, cellulose derivatives, organic acids and mixtures thereof.

37. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 35, wherein said bulking agent is used in an amount from about 25% to about 99.99% by weight of the neotame powder.

38. The N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 37, wherein said bulking agent is used in an amount from about 50% to about 99.99% by weight of the neotame powder.

39. A method of sweetening a food by including in said food a N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19 in an amount effective to sweeten said food.

40. The method according to claim 39, wherein said food is selected from the group consisting of beverages, fluid dairy products, condiments, baked goods, frostings, bakery fillings, candy and chewing gum.



41. A sweetened food comprising a N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester composition according to claim 19 in an amount effective to sweeten the food.

42. The sweetened food according to claim 41, wherein said food is selected from the group consisting of beverages, fluid dairy products, condiments, baked goods, frostings, bakery fillings, candy and chewing gum.

43. A method of preparing a table-top sweetener comprising the steps of:

(a) forming a premix of a sweetening effective amount of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder, a binding agent and a carrier;

(b) compacting said premix to form compacts; and

(c) breaking up said compacts to form granules.

44. The method of preparing a table-top sweetener according to claim 43, wherein said binding agent is selected from the group consisting of maltodextrin, dextrose-maltodextrin blends, hydroxypropylmethyl cellulose, carboxymethyl cellulose, polyvinylpyrrolidone, sucrose and mixtures thereof.

45. The method of preparing a table-top sweetener according to claim 43, wherein said carrier is selected from the group consisting of dextrose, citric acid, maltodextrin, dextrose-maltodextrin blends, lactose, inulin, erythritol, sorbitol, sucrose, aspartame,

acesulfame salts, sucralose, cyclamate, saccharin, stevioside, alitame and mixtures thereof.

46. A table-top sweetener made according to the process comprising the steps of:

- (a) forming a premix of a sweetening effective amount of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder, a binding agent and a carrier;
- (b) compacting said premix to form compacts; and
- (c) breaking up said compacts to form granules.

47. The table-top sweetener according to claim 46, wherein said binding agent is selected from the group consisting of maltodextrin, dextrose-maltodextrin blends, hydroxypropylmethyl cellulose, carboxymethyl cellulose, polyvinylpyrrolidone, sucrose and mixtures thereof.

48. The table-top sweetener according to claim 46, wherein said carrier is selected from the group consisting of dextrose, citric acid, maltodextrin, dextrose-maltodextrin blends, lactose, inulin, erythritol, sorbitol, sucrose, aspartame, acesulfame salts, sucralose, cyclamate, saccharin, stevioside, alitame and mixtures thereof.

49. A method of preparing a powdered soft drink mix comprising the steps of:

- (a) forming a premix of a sweetening effective amount of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-

phenylalanine 1-methyl ester powder, a binding agent and a carrier;

- (b) compacting said premix to form compacts; and
- (c) breaking up said compacts to form granules.

50. The method of preparing a powdered soft drink mix according to claim 49, wherein said binding agent is selected from the group consisting of maltodextrin, dextrose-maltodextrin blends, hydroxypropylmethyl cellulose, carboxymethyl cellulose, polyvinylpyrrolidone, sucrose and mixtures thereof.

51. The method of preparing a powdered soft drink mix according to claim 49, wherein said carrier is selected from the group consisting of dextrose, citric acid, maltodextrin, dextrose-maltodextrin blends, lactose, inulin, erythritol, sorbitol, sucrose, aspartame, acesulfame salts, sucralose, cyclamate, saccharin, stevioside, alitame and mixtures thereof.

52. A powdered soft drink mix made according to the process comprising the steps of:

- (a) forming a premix of a sweetening effective amount of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder, a binding agent and a carrier;
- (b) compacting said premix to form compacts; and
- (c) breaking up said compacts to form granules.

53. The powdered soft drink mix according to claim 52, wherein said binding agent is selected from the group consisting of maltodextrin, dextrose-maltodextrin

blends, hydroxypropylmethyl cellulose, carboxymethyl cellulose, polyvinylpyrrolidone, sucrose and mixtures thereof.

54. The powdered soft drink mix according to claim 52, wherein said carrier is selected from the group consisting of dextrose, citric acid, maltodextrin, dextrose-maltodextrin blends, lactose, inulin, erythritol, sorbitol, sucrose, aspartame, acesulfame salts, sucralose, cyclamate, saccharin, stevioside, alitame and mixtures thereof.

55. A process for preparing a blend of granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester and a blending agent comprising the steps of:

(a) compacting N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder to form compacts;

(b) breaking up said compacts to form said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester; and

(c) dry blending said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester with said blending agent.

56. The process for preparing a blend of granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester and a blending agent according to claim 55, wherein said blending agent is selected from the group consisting of aspartame, acesulfame salts, sucralose, saccharin, alitame, cyclamates, stevia

derivatives, thaumatin, sucrose, fructose, dextrose, polyol sugar alcohols, dextrose, citric acid, dextrin, maltodextrin, dextrose-maltodextrin blends, lactose, inulin, erythritol, sorbitol, stevioside, hydroxypropylmethyl cellulose, carboxymethyl cellulose, polyvinylpyrrolidone, N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester and mixtures thereof.

57. A blend of granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester and a blending agent made according to the process comprising the steps of:

(a) compacting N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester powder to form compacts;

(b) breaking up said compacts to form said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester; and

(c) dry blending said granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester with said blending agent.

58. The blend of granules of N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester and a blending agent according to claim 57, wherein said blending agent is selected from the group consisting of aspartame, acesulfame salts, sucralose, saccharin, alitame, cyclamates, stevia derivatives, thaumatin, sucrose, fructose, dextrose, polyol sugar alcohols, dextrose, citric acid, dextrin, maltodextrin, dextrose-maltodextrin blends, lactose, inulin, erythritol,

sorbitol, stevioside, hydroxypropylmethyl cellulose, carboxymethyl cellulose, polyvinylpyrrolidone, N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester and mixtures thereof.